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AUTHOR Christensen, Douglas D.
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ABSTRACT

This document consists of a collection of thoughts, observations, descriptions, definitions, diagrams, models, suggestions, guidelines, and forms pertaining to curriculum development and instructional planning at the elementary and secondary level. Among the specific topics addressed in one or more of the materials collected here are the objectives of curriculum development, the development process, the components of curriculum design, the roles of the personnel involved, ideal and actual curriculum design and development models, the planning of development cycles, the characteristics of scope and sequence planning, procedures for development of scope and sequence manuals, suggestions for involving personnel, methods for organizing personnel, processes and responsibilities of planning committees, and cognitive and affective behavioral objectives for the classroom. Sample forms and worksheets are provided. (PGD)

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Curriculum Development and Instructional Plannings:

A Model For Developing Quality Instruction

March, 1986

Dr. Douglas D. Christensen
Superintendent of Schools
North Platte, Nebraska

EA 018 529

OBJECTIVES

... Define curriculum, instruction, teaching and learning so as to identify both differences and interrelationships of terms.

... Define curriculum, instruction, teaching and learning so as to identify various functions, roles and responsibilities of individuals and groups involved.

... Outline and use the 10 steps of the scope and sequence process in actual subject or topic.

... Write learner objectives for topics included in scope and sequence outline.

... State the process for developing subject goals, department goals, and school goals.

... Outline the process for developing school district philosophy and mission from subject goals, department goals and school goals.

... Apply the procedures for implementation and management of scope and sequence so as to maximize opportunities for individualization of instruction.

... Identify the essential components of plan for evaluating the results of instruction in relationship to instruction.

... Apply the scope-sequence planning process in local setting for developing content or process-product outlines.

Forward

Curriculum and instructional planning are once again in the forefront of education. With public pressure for quality in educational programs, curriculum and instructional planning are rapidly becoming basic skills needed by all educators. While the pendulum of public pressure for excellence in education continues to swing we seem to vacillate from "hot pursuit" of quality only to return at some point to cool acceptance of what currently exists. However, the current impetus for quality is different. For the first time the realization has dawned that a nation, i.e., its people, could be "at risk" because of an educational system that serves mediocrity. Realization that the competitive edge of a nation in areas of economics, technology, and agriculture is honed by its educational system, makes this swing of the pendulum different from those of recent history.

The craft of educators is growing and has taken on more of a professional stance. Combined with the impetus for quality, planning in curriculum and instruction is here to stay.

A BRIEF HISTORY OF CURRICULUM DEVELOPMENT

The history of curriculum development and instructional planning reveals that it has not always been viewed as essential nor vital. For the most part, it was external to the schools and classrooms of the nation. Textbooks and guides were written by individuals far removed from the classroom learning experience. Purposes of subjects, courses and programs were discussions for college and university professionals. Instructional planning was limited to lesson plans and materials collection by teachers.

CURRICULUM DEVELOPMENT AS ART & SCIENCE

Research in curriculum development is beginning to impact upon curriculum development. Research has determined to be valid some of the time-honored and traditional beliefs. Likewise, research has caused rethinking of basic and fundamental beliefs and practices.

The science of curriculum development emerges today as a combination of theory and empiric research. As a result, some beliefs are retained because of power of the theory alone or validation of beliefs through empiric study. Curriculum development emerges today as a complex package of art and science with science becoming an increasing share of the mix. Curriculum developers today, and in the future, will have the advantage of an increasingly exacting science upon which to practice both their craft and special skills.

THE EMERGING ROLE OF THE CURRICULUM PROFESSIONAL

Curriculum development as a function and responsibility of professional educators has slowly evolved. Major social factors have from time to time given considerable push to the movement.

Today the professional educator - teacher and administrator - must be able to understand and practice the skills of curriculum development and instructional planning. The extent to which educators embrace and give leadership to curriculum development and instructional planning will largely determine the extent to which education will be able to capture excellence, quality and accountability now and in the future. The lack of such skills will doom education as an institution so far out of touch that society will question whether or not it is necessary at all.

CONCEPTUALIZING THE PROCESS

Curriculum development and instructional planning is both a mental and mechanical process. One without the other leaves results of little value and is probably not worth the effort.

Conceptualizing the process, the purpose and process, results in a utilitarian product. The ability to see the big picture is invaluable to the curriculum developer and instructional planners.

Although the practice of curriculum development and instructional planning is emerging from its cacoon of the past, three basic factors remain resulting in the immature stage of curriculum development and instructional planning as professional practice.

1. There is lack of accurate conceptualization of and general concensus on the major constructs of curriculum development. Definitions are ambiguous and fuzzy. Practitioners say one thing only to be understood by others in highly idiosyncratic ways.

2. There is lack of leadership among practicing education professionals with abilities to conceptualize, develop, implement and evaluate effective curriculum design. Roles and responsibilities are not clearly defined and often not defined at all. Curriculum development responsibilities are often assigned by default like drawing the short straw.

3. There is lack of specification and differentiation in the roles of Boards of Education, Superintendents, building Principals and Teachers.

SCHOOLS NEED CURRICULUM AND INSTRUCTIONAL LEADERSHIP

American schools need mechanisms for making rational decisions about what schools are to do and about what is properly included as programs, services, and functions. American schools also need leadership if such mechanisms are to be designed, implemented, monitored, and evaluated.

Curriculum leadership begins with conceptualization of basic concepts and fundamental constructs. Accurately defined, concepts and constructs provide foundations for building the professional practice of curriculum design.

CURRICULUM DESIGN

Curriculum design includes the functions of what is traditionally referred to as curriculum development and instructional planning. Likewise, curriculum design extends the instructional planning function into areas often thought to be unrelated.

Curriculum design has two major components. Both are plans or designs as well.

The educational plan of curriculum design focuses on the learning process. The educational plan delineates philosophy, purpose, goals, objectives and the programs and services necessary to carry out the former. The education plan spells out "why" as well as "how".

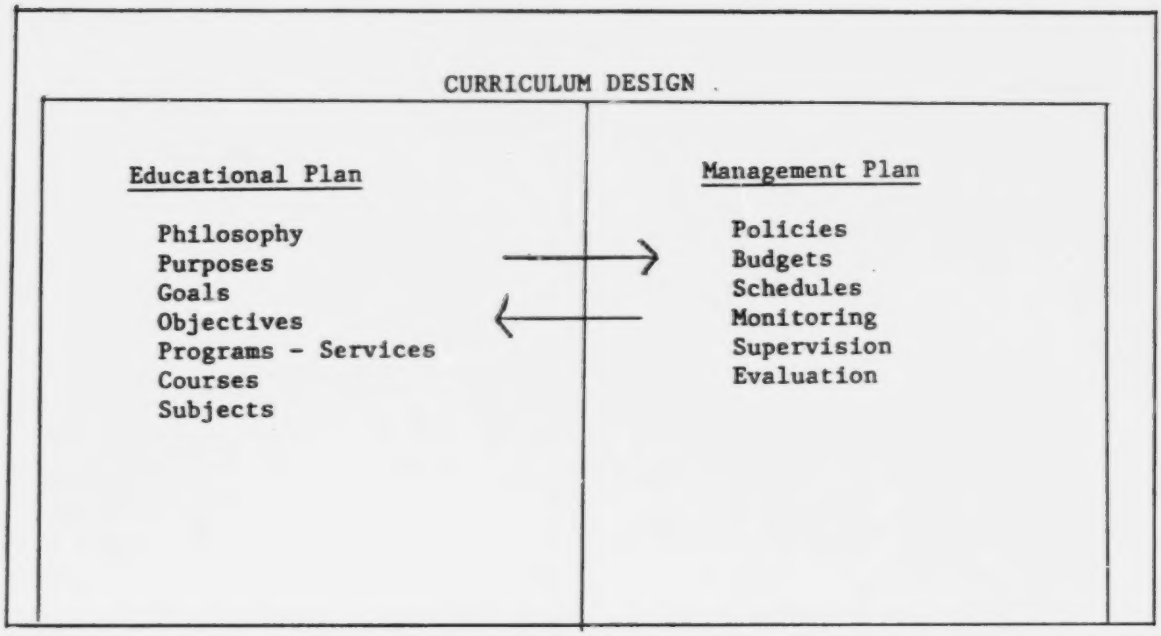
EDUCATION PLAN

"Why"	"How"
Philosophy	Programs
Purposes	Services
Goals	Courses
Objectives	Subjects

The second component of curriculum design is the management plan. Management plans spell out all of the ways in which the school will organize itself to accomplish the education plan. Management plans include the following:

MANAGEMENT PLAN
- Policies
- Budgets
- Schedules
- Monitoring
- Supervision
- Evaluation

Through the education and management plans, curriculum design results in structuring the school enterprise in specific ways that define directions and destinations, establish road maps to reach destinations and organize for support of the trip. Curriculum design is a systemmatic structuring of schools for purpose, goals and activities.



Curriculum Design includes two major functions:

Educational Planning and Management Planning

CURRICULUM AND INSTRUCTIONAL PLANNING

Effective curriculum and instructional planning requires the following:

... common language to facilitate accurate communication.

... common conceptualization to define and coordinate roles, and responsibilities.

... step-by-step process for efficient and effective group planning.

... leadership through role definition and differentiation.

CONCEPTUALIZING . . . .

CURRICULUM

A design, a blueprint, a map
Expressed in mission, purpose and goals
Answers the questions "why?" or "what for?"

INSTRUCTION

Operationalization of the curriculum
Expressed in courses, subjects, activities, policies, rules and regulations, schedules, services, facilities, personnel, and budgets
Answers the question "how?"

TEACHING

Teacher knowledge, skills and attitudes
Teacher methods
Teacher behaviors

LEARNING

Responsive behavior of students
Outcomes of instruction and teaching
Changes in achievement levels - knowledge, skills and attitudes or values

Who Does What?

Curriculum decisions, because they lie at the heart of why we have schools, specific programs, specific services, and specific courses are political. The responsibility therefore lies within the legislative authority of the board of education. Boards of education are responsible for decisions that determine "why" and "what for."

Through its executive officer, the superintendent, boards must legislate the intent and purposes of instruction. The professional staff, under the leadership of the superintendent, assist the board in defining the missions, purposes, and goals that communities expect of their schools.

The superintendent plays leadership roles in assisting the boards to define and clarify the desires of the community. The superintendent is the data-gather, fact finder,and screen through which the board attempts to reach consensus on curriculum - mission, purposes, and goals.

Principals As Instructional Leaders

Instruction is the "how" of curriculum and the resonsibility for instruction lies within the professional staff under the leadership of the building principal. Once curriculum is defined or clarified, principals are responsible for mobilizing people and resources to develop plans, programs, and services for bringing curriculum into reality.

Principals are both leaders and managers of instruction. Therefore, they are responsible for seeing that the planned program of instruction is delivered within the classroom. By direct observation, reviews of lesson plans, reviews of texts and learning materials, and analysis of test results, principals are able to monitor instruction and judge effectiveness based upon both process (observation, lesson plans, texts and learning materials) and product (achievement results).

Specific Responsibilities of the Superintendent

The role of the superintendent as educational leader-manager would include the following:

1. Conceive, interpret and effect proposals that elevate the quality of education.
2. Lead, facilitate and even coerce formulation of curriculum design by continually raising questions about mission, purposes, and outcomes.
3. Educate communities, in general, and board of education, specifically, about curriculum design and the roles that each must play.
4. Develop patterns of involvement throughout the school-community that are practical, understandable to others and dependable.
5. Remove constraints and barriers to effective organizational development and carefully construct curriculum design to provide foundations for growth and boundaries for determining direction.
6. Make decisions about curriculum designs so that decisions of others are purposeful and responsive to the design.
7. Assist other personnel, especially principals, in developing and defining the respective roles as instructional leaders.

Role of Principals as Instructional Leaders

The role of principals as instructional leaders would include the following:

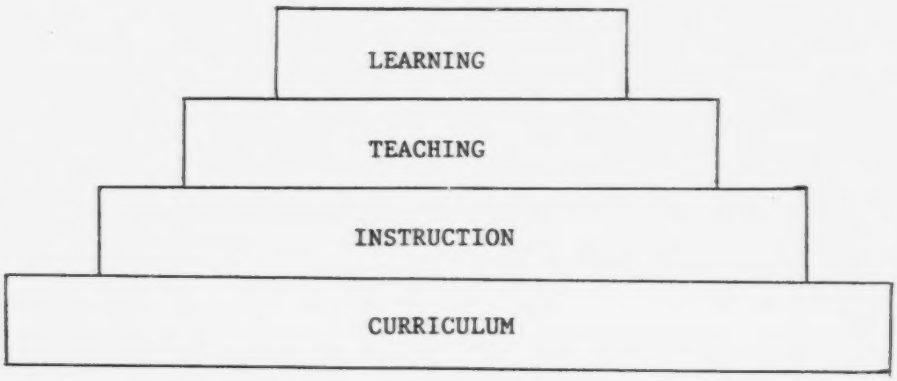
1. Provide safe environments for professional exploration and self-inspection. Provide environments that are sufficiently safe to encourage searching for alternatives and risk-taking by faculty.
2. Specify expectations for student-teacher interactions. Principals who set high, but reasonable, standards for teacher behavior tend to cause teachers to set the same high, but reasonable, standards for students.
3. Assume leadership responsibility for the real curriculum that students experience in the classroom. Through continuous monitoring of course content and student achievement, the principal is able to align classroom curriculum with the intention of the formal curriculum design.
4. Persist. Principals must tirelessly push, prod, guide, and above all, lead others.
5. Select, orient, supervise, and evaluate teachers. Teachers are key to curriculum, the one that is experienced by students. The roles of teachers must be defined, supervised, and evaluated.

ROLES AND RESPONSIBILITIES

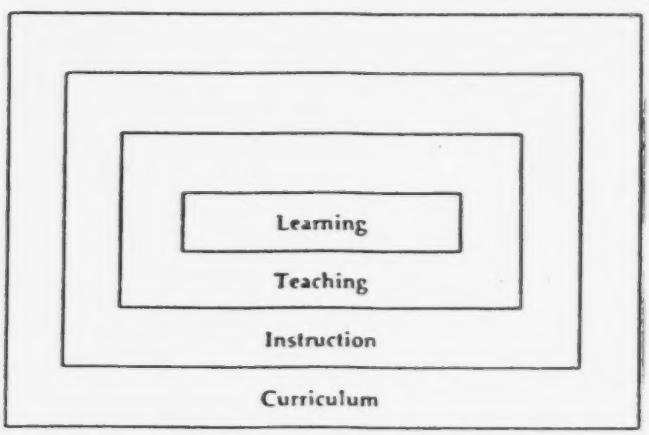
FUNCTIONS	RESPONSIBILITY	LEADERSHIP ROLES
Curriculum ("why")	Community	Board of Education Superintendent
Instruction ("how")	Professional Staff	Principals- Teachers
Teaching	Teachers	Teachers- Principals
Learning	Students	Students- Teachers- Parents

IDEAL CURRICULUM DESIGNS

Curriculum leadership begins with conceptualization of basic concepts and fundamental constructs. Accurately defined concepts provide foundations for building the professional practice of curriculum design.



THE FOUNDATION MODEL



THE BOUNDARY MODEL

Curriculum

Curriculum is design. Comparable to blueprints or maps, it provides an over-all concept and picture.

Curriculum, as design, is mission, purposes, and goals. Anything that provides a glimpse of the design, a piece of the picture, is curriculum. Statements that express reasons "why" are curriculum statements. They identify mission, purposes, and goals.

Responses to questions "why" or "what for" outline mission, purposes, and goals, e.g. curriculum. Applied to any level state, district, building, department, or subject a response to the questions why or what yields curriculum. The function of curriculum is to define the mission, purposes, and goals from the infinite choices available. Curriculum then represents what the school (or subject) is to accomplish. Curriculum identifies the outcomes of what students are to learn and know, do or feel as the result of learning.

Curriculum, then, is the foundations for building instruction, teaching and learning. It is also the boundary that limits what schools are to do from all the things they could do.

Instruction

Instruction is programs, services, and activities designed to accomplish the goals, purposes, and missions of curriculum. Instruction operationalizes curriculum. Instruction is the response to the question "How do we reach our stated goals, purposes and missions?"

Instruction includes subjects, courses, activities, services, policies, rules and regulations, schedules, budgets, personnel, and facilities. Everything, that is done to achieve the intended outcomes, is instruction. Instruction translates curriculum into action.

Instruction, planned programs, services and activities, designed to meet the intentions of the curriculum, form the foundations and boundaries for teaching. Instruction forms the boundary and foundation of teaching.

Teaching

Teaching refers to behaviors of teachers. As formal behavior, teaching is a planned and purposeful activity. Teaching then is the purposeful behavior of teachers intended to cause student learning.

Teaching includes planning, preparing, and presenting learning experiences for students (congruent within and upon) the instructional program of the schools and within the boundaries of the curriculum. Teaching also includes setting objectives, directed teaching, and evaluating the results.

Learning

Learning is what learners do in response to instruction and teaching. Learning is fundamentally a responsive behavior ultimately leading to a measurable change in what the student knows, is able to do, or feels (values, has attitudes about). Because learning is a responsive behavior, teaching is not a function of dispensing knowledge, developing skills, or professing attitudes and values. Teaching includes the development of teaching-learning relationships creating student responsiveness to instruction and teaching.

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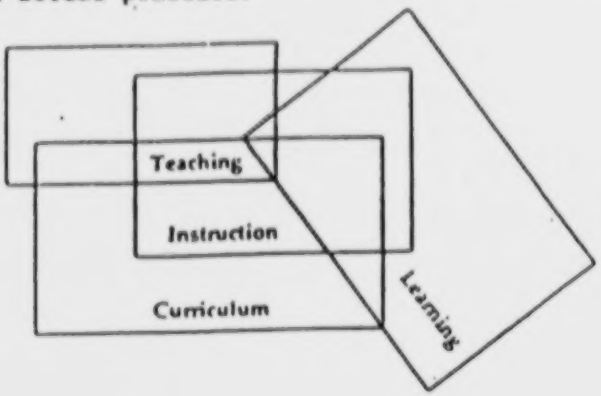
REAL CURRICULUM DESIGNS

Previous models depicted theoretical interrelationships among functions of curriculum, instruction, teaching, and learning. The interrelationships exist differently in actual practice.



MODEL OF ACTUAL PRACTICE

Extensive empirical data are not required to determine that interrelationships among functions of curriculum, instruction, teaching, and learning are not as integrated nor as sequential as indicated by previous ideal models. Each function is neither totally based (foundation) nor totally constrained (boundary) by preceding functions.

In practice, some phases of instructional programs rest soundly on foundations of curriculum and are likewise contained within its boundaries. However, there are also instructional programs, depending upon how curriculum is defined, that have no basis in curriculum and are not contained within its boundaries.

Similarly, some teaching in classrooms is provided for in prescribed instructional programs (curriculum guides). We also know that some teaching may not be supported or constrained by either curriculum or the prescribed instructional program. Such teaching is assumed by teachers who are neither compelled to deviate from prescribed programs nor restrained from doing so.

An example may help clarify actual interrelationships among the functions of curriculum, instruction, teaching, and learning.

Example: Teacher A, an art teacher, lectures his class about general behavior in school assemblies emphasizing the virtues of self-control and individual responsibility. Teacher A's lecture is appropriate as a response to incidents of student misbehavior. (Most school curriculum designs include either explicit or implicit statements about "good citizenship.") However, there is no instructional plan (curriculum guide) that directs a teacher of art to teach students about citizenship.

Hence, teaching about citizenship is not part of the planned program of instruction but permissible in the total activities of teachers because of the curriculum goal to produce "good citizens."

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In reality there will never be a pure interrelationship, for example, both totally supporting (foundation) and totally constraining (boundary), among the sequential functions of curriculum, instruction, teaching, and learning. However, current disparities and haphazard relationships can certainly be improved upon and, in fact, must be improved upon if schools are to be both efficient and effective in helping students to learn. It is imperative that mechanisms are devised and implemented to integrate relationships among curriculum, instruction, teaching, and learning.

Default v. Design

It is not a question whether schools will have curriculum or not. Curriculum exists as it is practiced. Curriculum may be either expressed or implied.

Mission and purposes, that is, curriculum, of schools can be determined a priori or by inference. A priori mission and purposes are those that are formal, explicit, announced in advance, and are clearly evident in practice. Mission and purposes can also be determined by inference. Trained observers are able to infer intentions and purposes from observed actions of individuals within organizations and from effects (responses) of those actions upon clients (students).

Inferred mission and purposes are almost always achieved by chance, if achieved at all. Inferred mission and purposes occur not by design but rather by default. Schools have curriculum. It may occur because of design or because of default.

Design Functions of Curriculum

In addition to supporting (foundation) and constraining (boundary) functions, curriculum has educational and management functions. The educational functions of curriculum are to define those skills, knowledge, and attitudes that are to result from a sequence of schooling, that is, instruction. Well-defined curriculum identifies those things to be included and those things to be categorically excluded or not included because there exists no compelling reason to do so. Management functions of curriculum refer to the organization of resources necessary to accomplish educational purposes.

Both educational plans and management plans as components of curriculum design include the following characteristics:

1. Be written and formally organized.
2. Identify plans for activities.
3. Identify intentions:
   a. what learnings students are to master.
   b. means of evaluation to be used to assess learning.
   c. criteria according to which students are admitted to programs.
   d. materials and equipment to be used.
   e. qualities required of teachers.
4. Include intentions deliberately chosen to promote learning.
5. Articulate relationships among different elements (objectives, content, and evaluation) integrating them into a unified and coherent whole.
6. Be a system.

Curriculum design is a management tool for identifying and controlling results, e.g., pupil learnings. Curriculum (design) is a plan that specifies what is to be done and what is needed to enhance the probability that defined purposes are attained.

Educational plans state affirmatively "of all things we could teach in schools, these are the things we are going to teach." Or, stated in learner outcomes "of all things students we are going to teach." Or, stated in learner outcomes "of all things students could learn, these are the things they should learn." Educational plans serve similar functions to financial budgets. Financial budgets identify those functions for which organizations intend to spend money because they have been determined to be more important than other functions that were not, but could have been, included. It is the same for educational plans of curriculum design.

In the absence of educational plans, worthy outcomes in terms of benefits to students are left to chance. Worthwhile outcomes are achieved by accident or default but not by intention or design. Rational and Responsive organizations cannot leave to chance those purposes for which it is responsible and expect to survive very long.

Academic Rigor

The current emphasis on academic rigor, i.e. more and tougher requirements, and more and tougher academic courses, will likely result in increased level of "rejects." More students are more likely to be unable to successfully complete the school curriculum if rigor is interpreted as simply "more and tougher." Academic rigor, without rejects, may be possible if schools adopt processes of design for curriculum and instruction. A rigorous curriculum may be possible under exacting circumstances that include at least the following:

1. Clear mission and purpose statements that establish defined boundaries for decisions about inclusion or exclusion of instructional programs, services and practices.
2. Planned relationships between content and time identifying optimal conditions for sequence and repetition leading to mastery.
3. Plans for integration of resources - people, time, and money-supportive of the defined mission and purposes.
4. Linkages between prescribed intentions (student outcomes) and content-time sequences to be encountered by students.
5. Assessment (testing) linkages between prescribed intentions and actual student outcomes.
6. Safety nets for students to provide instruction to cover developmental gaps and deficiencies related to the prescribed instructional program.

Two Basic Models

Two basic models exist for curriculum design in developing education plans. One model, currently the predominant one, is a "top down" model. The other, emerging, is "bottom up." One basically is a reverse of the other.

The top down model begins with district philosophy and proceeds through each step ultimately resulting in learning activities for students.

In essence, the top-down approach begins with the universe and proceeds through successive steps to narrow down the universal domain to the defined domain of the school district, building, subject area or course. Herein lies its greatest fault.

To begin, without constraints, provides opportunities for flexibility and creativity. Many times, however, it is like "contemplating the universe." Where do I start? Wh[illegible] I end?

Such planning models are vulnerable to inertia in getting started and to accidental or intentional heading in one direction. Top-down models begin with large, unlimited, domains and are subject to premature shrinkage just trying to get a handle on what is to be done.

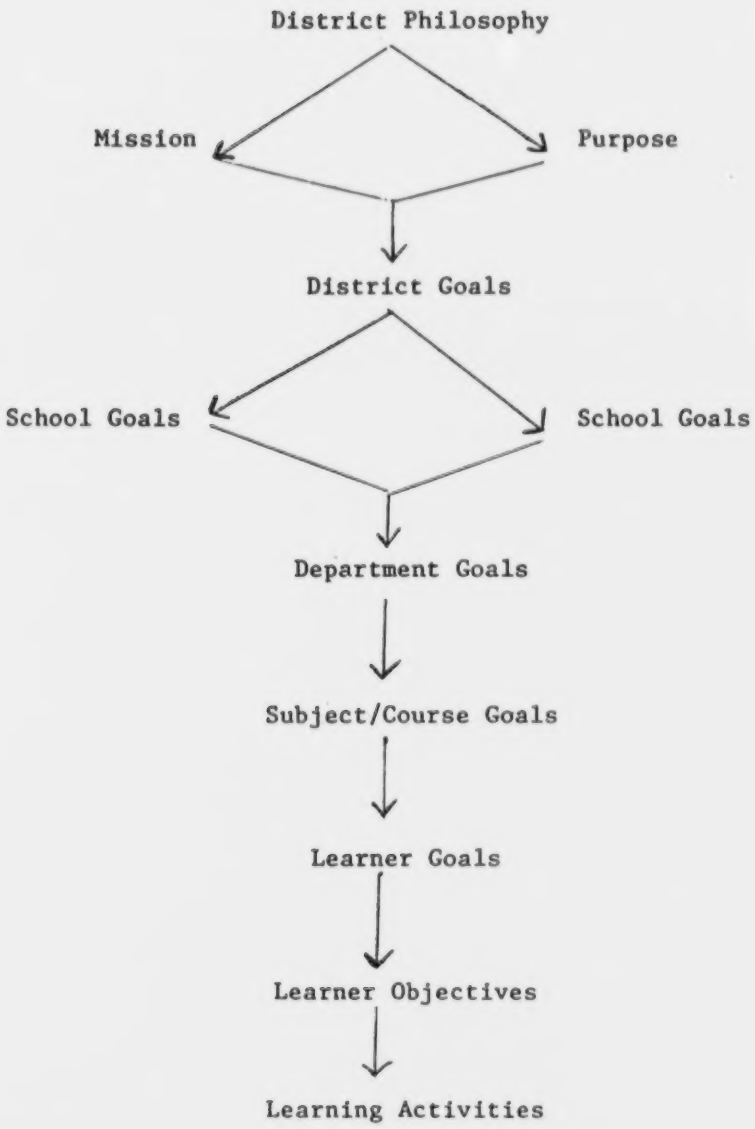
Top-down models are best applied when totally new areas are being explored and planned. Considering all the possibilities from the beginning may be helpful when a program is being planned from scratch.

The "bottoms up" model begins with a domain in which the planners are familiar and comfortable. This model begins with people where they are and moves them to the larger and larger picture in sequential steps. If properly designed, the bottom-up model can capture the creativity of the top-down model without the areas of vulnerability described.

The bottom-up model begins with current practice in the classroom which is the ultimate point of focus anyway. Because the curriculum in the classroom taught by teachers and experienced by learners is the central issue, why not begin there? It seems we should.

Beginning with classroom practice, the bottom-up model proceeds through successive steps leading to goals, purposes and philosophies. By coming back through the process, planners have opportunities for checking validity and consisting of purpose and practice.

"Top Down" Model



"Bottom Up" Model

A word of caution is in order. The bottom-up model is effective for education planning. The principles assumed to be operating determine its effectiveness.

Unless the following assumptions can be accepted, the bottom-up model may be flawed and not result in a valid plan.

Three Assumptions:

... Present practice is not all bad and provides a reasonable place to start.

... Individuals behave in ways that are both value-driven and goal-directed, either explicit or implied. These values and goals are discoverable.

... Taking people "where they are" and outlining the next step in a reasonable method for creating changes.

SETTING UP/PLANNING THE PLAN

An immediate objective of C/I planning is to produce a product that teachers and administrators will use. If the product is not used, little significant impact will result in improvement of learning. The process must be designed with utility in mind.

There is a natural tendency for schools to really blast-off once they get motivated to do something in C/I planning. Too many rockets going off at once will almost insure that after the smoke clears everyone has abandoned the launching pad.

It is critical to consider the time constraints of teachers in the classroom. It is recommended that teachers are responsible for creating and implementing one curriculum guide in major subject areas per year. A well-planned cycle targets specific subject areas for development each year but prevents any one teacher from having to deal with more than one curriculum guide at any one time.

TWO CYCLES

Two cycles are needed. One cycle is the process cycle.

Process Cycle - Ten Steps

A model for a complete cycle of curriculum design and instructional planning is outlined as follows:

1. Teacher content (topic) outlines.
2. Development of scope and sequence outlines.
3. Coordination and articulation of outlines based upon mastery targets.
4. Piloting.
5. Revision. (Selection of texts, materials and other learning resources)
6. Validation. (needs assessment - revision if necessary)
7. Development of learning objectives.
8. Development of unit goals and subject goals.(development of school goals and district goals)
9. Development of purpose and mission.
10. Development of philosophy and rationale.

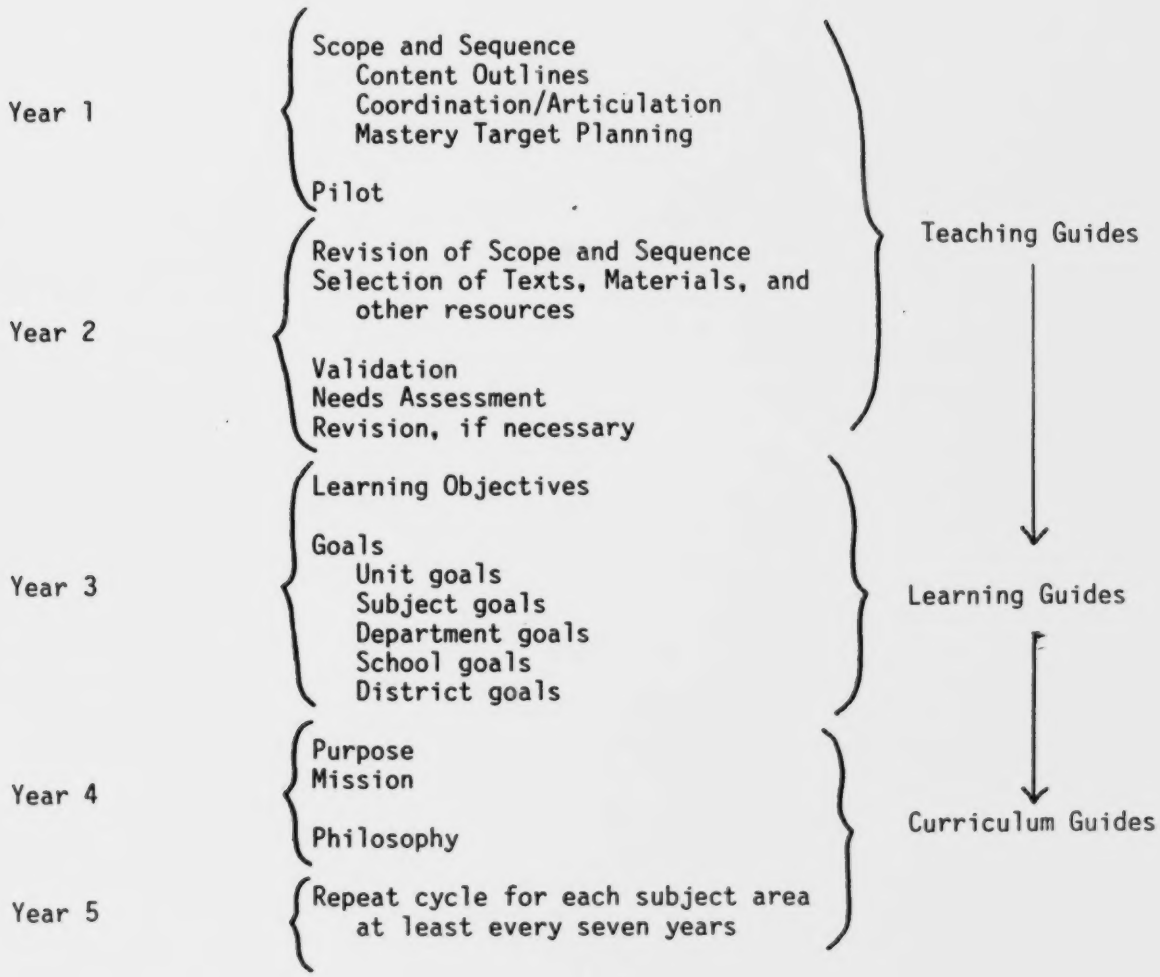
..... (Repeat the cycle every five to seven years).

The ultimate purpose of curriculum development and instructional planning is the creation of curriculum guides. Curriculum guides include all of the components of the ten-step model. The process for developing a curriculum guide begins with the establishment of a "teaching guide." Initially, curriculum design and instructional planning results in the development of a guide that focuses primarily on the work of teachers. The teaching guide includes the content outlines, mastery targets, textbook and material selections, validation, needs assessment and revision.

The transformation into a "learning guide" begins with the development of learning objectives. The focus of the written plan evolves from teaching into learning. Through the addition of objectives and goals, the guide now focuses on both teaching and learning.

In the final stages of development, the larger missions, purposes, and philosophy are added. This addition results in the evolution of the teaching and learning guide into a master educational plan for the district or curriculum guides.

CURRICULUM DEVELOPMENT CYCLE



Subject or Area Cycle

C/I planning takes time. The process requires blocks of time over as intensive period.

It is not possible to expect quality C/I planning to take place without providing blocks of time in some reasonable sequence. C/I planning isn't likely to happen in meetings before or after school. Nor will it occur in one or two afternoons of released time.

Ideally, extended employment during the summer is provided for the C/I teams. Usually 10-15 days are required for the first year. Three to five days is sufficient for the follow-up year.

A C/I planning calendar that provides released time during the academic year can accomplish a great deal if sufficient time is provided. However, starting and stopping with extended gaps in between sessions is not efficient and creates an inertia to be broken down at subsequent meetings.

Select areas to be planned and target each area for a beginning date. Select one basic skill, K-12, each year.

C/I PLANNING CYCLE

	Year	Area
1.	19____	Math
		Special Education
		Physical Education/Health
		Libraries
2.	19____	Language Arts/Reading
		Vocational Agriculture
		Industrial Arts
		Activities
3.	19____	Science
		Guidance and Counseling
		Business Education
		Music
		Home Economics
4.	19____	Social Studies
		Modern Languages
		Art
		Driver Education
		Power Mechanics
5.	19____	Gifted Education
		Radio/TV
		Speech/Debate/Drama
		Journalism
6.	19 (repeat)	Math
		Special Education
		Physical Education/Health
		Libraries

What is Scope & Sequence

Scope and sequence planning is the writing of a topic or content outline for a lesson, unit, course, department or system. The outline identifies all topics that are to be taught by teachers and learned by learners.

Scope refers to the depth of treatment of the topic. Outlines should be sufficiently detailed to identify the depth of coverage for each topic and subtopic.

Scope also refers to the breadth of treatment of the topic. Again the outline must be sufficiently detailed to identify how broadly the topic or subtopic is to be handled by both teacher and learner.

Scope and sequence outlines can not be too detailed. The more detailed they are the greater the chance they serve as a classroom guide to direct teaching and learning toward intended outcomes.

Non-essential detail should be eliminated. Topics that teachers may teach and learners may learn at their discretion should not be included. Only essential teaching and learning is included.

Sequence in order. The topics in the outline should reflect a sequential order of development where each topic is prerequisite to the next. When order is not a major concern the topic should not be numbered sequentially indicating to teacher and learner that order is not primary concern and the topic is not prerequisite to mastery of future topics.

Scope and sequence outlines are lists of topics or content in outline form using major topics and subtopics. Subtopics are listed sufficiently to identify the breadth and depth of teaching and learning. The order of the topics indicates those that must be mastered as prerequisites to future topics.

Instruction Coordination & Articulation

Scope and sequence outlines provide basis for planning across grade levels, across building units, and across departments, and across the entire system.

Mastery of subject matter requires continuous instruction, reinforcement and development of facts, concepts and ideas. The process leading to mastery is planning in steps referred to as introduction, reinforcement, development, enrichment and mastery.

Introduce (I): The topic is presented for the first time. The major purpose of instruction is development of basic awareness, knowledge, and appreciation of the topic or basic skills in application of the topic. Students are expected to master the topic at primary conceptual (knowledge) skill and/or effective (appreciation) levels.

Reinforce (R): The topic is presented in similar manner to its initial presentation. The primary purpose is reintroduction and mastery is essential to mastery of subsequent topics.

Develop (D): The topic is developed for the purpose of student mastery beyond primary levels. Topics are presented from multiple perspectives (knowledge) with multiple application (skills and multiple evaluations. Students are expected to master the topic in greater breadth and/or depth (appreciation).

Enrich (E): The topic is presented for the purpose of enriching student experience with previously presented and mastered topics. Student mastery is determined according to preconceived criteria for each student according to need and/or interest.

Mastery is indicated by the topic and the expected time. By circling the other code letters in the coordination plan, indication is given that teaching and learning should culminate in learner mastery and ability to use the topic independently.

GUIDELINES FOR DEVELOPMENT OF CURRICULUM
SCOPE AND SEQUENCE MANUALS

1.0 Purposes

Scope and Sequence Manuals are developed to serve the following needs of the district:

1.1 District Philosophy and Curriculum Purposes:
- 1.1.1 Explain the philosophy of the school district curriculum areas in relationship to the adopted district philosophy and priorities.
- 1.1.2 Identify the purposes of individual courses, subjects, and instructional programs and services.
- 1.1.3 Provide continuity of instruction across grades, subjects, and departments, K-12.

1.2 Planning, Implementation and Monitoring of Instruction:
- 1.2.1 Provide primary basis for planning of instruction by teachers.
- 1.2.2 Provide a means for planning programs for students with special needs, both handicapped and gifted.
- 1.2.3 Provide guidelines for selection of textbooks, teaching materials, as well as supplementary supplies and materials necessary to support classroom instruction.
- 1.2.4 Provide a means of monitoring classroom instruction by administrators.
- 1.2.5 Provide basis for continuous evaluation and revision of courses, subjects, and other instructional programs and services.

1.3 Reference Guides:
- 1.3.1 Provide references for students and parents for course selection and four-year program planning.
- 1.3.2 Provide references for students, parents, and staff to review content of various course offerings.
- 1.3.3 Assist counselors in advising students in course selection and four-year program planning.
- 1.3.4 Provide new students with references for the purposes of course selection and/or grade placement.

1.4 Selection of Staff:
- 1.4.1 Provide guidelines for the selection of teaching staff according to preparation, ability, personal philosophy, and subject matter emphasis.

2.0 Rationale

Scope and Sequence Manuals are necessary for the following reasons:

2.1 Coordination and Articulation:

- 2.1.1 To provide educational programs that are developmental in sequence.
- 2.1.2 To eliminate duplication and gaps from instructional programs and services.
- 2.1.3 To provide instructional programs and services that balance time spent in specific topic areas so as to manage classroom time according to those subjects and content areas needing greatest emphasis.

2.2 Individualization of Instruction:

- 2.2.1 To provide instructional programs and services based upon individual student needs.
- 2.2.2 To provide educational programs and services covering basic life skills in the context of current technology.
- 2.2.3 To provide instructional programs and services based upon development of positive self-concept.
- 2.2.4 To provide programs and services balanced according to the psychological, social, emotional, physical and mental needs of the student.
- 2.2.5 To provide instructional programs and services that are balanced among the domains of instruction, including the cognitive (knowledge or content), the affective (feelings and attitudes), and the psychomotor (skills).

2.3 Assessment and Evaluation:

- 2.3.1 To provide a means of measurement of student achievement based upon specific content, attitudinal or skill criteria.
- 2.3.2 To provide a means of assigning teachers to instructional programs and services according to strengths.

3.0 Procedures for Development

3.1 Development:

- 3.1.1 Scope and sequence should be reviewed by professional staff including teachers and administrators.

3.2 Validation:

- 3.2.1 Scope and sequence should be reviewed by those professionals who have general curriculum as well as subject-area expertise.
- 3.2.2 Scope and sequence should be reviewed by and receive approval from the Curriculum Council.
- 3.2.3 Scope and sequence will be reviewed by selected groups of students representing broad grade levels, interests, and abilities. In addition, selected students with a variety of post-secondary orientations, will review scope and sequences.

3.3 Special Needs:

3.3.1 Special Services staff will review scope and sequences, developing recommendations for inclusion of learning activities to meet the needs of special education students, both handicapped and gifted.

3.4 Continuous Development:

3.4.1 Cycles will be established for the continuous evaluation, improvement and development of curriculum scope and sequence for courses, subjects and programs.

4.0 Format

The format of curriculum scope and sequence manuals is outlined as follows:

4.1 Outline Format:

4.1.1 Scope and sequences will be written in ourline format, with emphasis on simplicity of language. Technical language will be used were appropriate.

4.1.2 Scope and sequences will be bound in loose-leaf notebooks.

4.1.3 Scope and sequences should be developed to provide checklists or maps for each course, subject and service.

4.2 Ease of Reference:

4.2.1 Scope and sequence manuals should be indexed, cross-referenced, and include a table of contents.

4.2.2 Scope and sequence manuals should indicate the extent of emphasis of each topic listed.

4.3 District Philosophy:

4.3.1 Scope and sequence manuals will include a statement of the philosophy of education of the district and the priorities established by the Board of Education. In addition, the manual will include a statement of the philosophy and purpose of the specific subject, course or service.

4.4 Special Needs:

4.4.1 Scope and sequence will include optional units for the purposes of meeting the special needs of individual students.

INSTRUCTIONAL PLANNING GUIDE

Scope and Sequence

Directions for Use

(1) Subject/Department:

Enter the name of the subject or departments for which scope and sequence instruction is being planned.

(2) Grade Level(s):

Enter the grade levels(s) for which scope and sequence instruction is being planned.

(3) Major Topic/Unit Title:

Enter the name of the major topic or unit title for which sub-topics will be listed according to desired scope and sequence.

(4) Prerequisite Topic(s):

List any topics that represent prerequisite concepts (knowledge), skills or attitudes essential for mastery of the major topic or unit.

(5) Topic Item(s):

Enter topic names so as to best identify the knowledge (content), skills or feelings (attitudes) to be mastered. Topic order should be sequential whenever mastery of one topic is prerequisite to mastery of subsequent topics.

(6) Mastery Area(s):

Identify (✓) mastery area(s) for each topic listed. Each topic may have more than one mastery area.

Knowledge (K): Mastery Area is knowledge of the topic. Students are evaluated on content mastery.

Skills (S): Mastery Area is a skill. The skill may be either a mental skill (psychological) or physical (motor) skill or both. Students are evaluated on ability to demonstrate skill(s) in application of the topic.

Attitude (A): Mastery area is an attitude or feeling (affect) about the topic. Students are evaluated on the expression of individual attitudes or feelings.

(7) Scope:

Scope indicates the grade level(s) for which student experiences with each topic are planned. Scope also indicates the level or depth of the experience that is planned.

Enter the grade level(s) for which scope and sequence is being planned. For each topic listed enter, under the appropriate grade level, a code letter indicating the scope (depth) of student experience planned.

Introduce (I): The topic is presented for the first time. The major purpose of instruction is development of basic awareness, knowledge, and appreciation of the topic or basic skills in application of the topic. Students are expected to master the topic at primary conceptual (knowledge) skill and/or affective (appreciation) levels.

Reinforce(R): The topic is presented in similar manner to its initial presentation. The primary purposes is reintroduction and mastery is essential to mastery of subsequent topics.

Develop (D): The topic is developed for the purpose of student mastery beyond primary levels. Topics are presented from multiple perspectives (knowledge) with multiple applications (skills) and multiple evaluations. Students are expected to master the topic in greater breadth and/or depth (appreciation).

Enrich (E): The topic is presented for the purpose of enriching student experience with previously presented and mastered topics. Student mastery is determined according to preconceived criteria for each student according to need and/or interest.

INSTRUCTIONAL PLANNING GUIDE

Scope and Sequence

(1) Subject/Department:_____ (2) Grade Level(s)_____

(3) Major Topic/Unit Title:_____

_____

(4) Prerequisite topic(s):_____ _____ _____

_____ _____ _____ _____

(5) TOPIC OUTLINE/SEQUENCE	(6) Mastery Area			(7) Grade Level						
	K	S	A							

(5) TOPIC OUTLINE/SEQUENCE	Mastery (6) Area			(7) Grade Level						
	K	S	A							

GETTING STAFF INVOLVED

The key to a good product is getting competent, enthusiastic people involved. Faculty ownership is critical.

C/I teams can be volunteer or selected or a combination of both. Volunteer teams that are selected from applications are ideal. There may be cases when individuals may have to be encouraged to apply in order to complete a team or secure specific expertise or representative ability.

The application form should be simple. Selection should be made by or with direct input of building principals.

Teams need to be organized well in advance of the actual time that the team planning begins. Early identification of leadership team gives credibility and reality to the process. The team will also be in a position to assist individual faculty in completing the preliminary work needed by the team.

The team should consist of six to ten people. Eight seems to be ideal. The team should be representative of the various subjects/courses in a department of subject area. The team should also be representative of the grade span having at least one person from primary, intermediate, junior high/middle school, and high school.

Teams should reflect the entire grade span, K-12. Teams may subdivide into grade level committees for some preliminary work but final coordination must be K-12.

The committee chairperson should be selected by an administrator. Committees often do not select a chairperson based upon leadership and this position is too important to be left to chance.

If at all possible, members of the team should also serve as building or grade level team leaders. Team leaders help guide the preliminary work to completion, as well as assist in orientation and implementation. A team

leader in the building or group is visible evidence that there is an intent to do something and that the process is "for real." The building team leader is also troubleshooter and liason.

APPLICATION FOR SUMMER CURRICULUM WORK

NAME _____

POSITION AVAILABLE AND APPLIED FOR: (Check One)

Subject Area: _____

_____

_____ Primary Representative _____ Intermediate Representative

_____ Jr. High Representative _____ High School Representative

DATES: _____ HOURS: 8:00 a.m. - 4:00 p.m.

Salary: ___/day for Committee Membership ___/day for Chairperson

DUTIES:

1.0 Development of philosophy and purpose (ideals) for the subject or topic area.

2.0 Curriculum and Instructional Planning Phase
- 2.1 Development of scope and sequence, K-12, for subject areas. The scope and sequences are coordinated across departments and articulated K-12. Policies and procedures would be developed for non-subject areas.
- 2.2 Development of specific instructional programs, learning activities, and learning materials for special education students, i.e., both handicapped and gifted.
- 2.3 Development of specific learning objectives, and learning activities, consistent with the scope and sequence outline for the purpose of enhancing student self-concept and facilitating positive personal development.

3.0 Support of Instruction
- 3.1 Review and selection (or planning for) textbooks and learning materials for the seven-year interim cycle.
- 3.2 Review of facilities and equipment necessary to support the defined scope and sequence.

* * * * * * * * * * * * * * * TO BE COMPLETED BY OFFICE * * * * * * * * * * * * * * *

_____ Approved

_____ Disapproved

_____
Building Principal

_____
Curriculum Council

_____
Superintendent

RETURN TO BUILDING PRINCIPAL BY _____

DATE:

TO: Study Teams - Follow-up

FROM:

SUBJECT: FOLLOW-UP PROCEDURES

The following procedures basically outline the steps to be completed in follow-up activities related to the initial development of scope and sequence guidelines. While these steps are to be general in nature, they are to be adapted to each particular area and need to be as specific as possible in order to accomplish the task of developing a usable scope and sequence guideline for each subject area.

14.1 Review of initial scope and sequence draft checking for content, knowledge and attitudinal gaps.

14.2 Review of initial scope and sequence, checking for coordination needs, coordination improvement, etc.

14.3 Validation of scope and sequence by any or all of the following activities.

14.3.1 Matching of content to standardized achievement measures.

14.3.2 Review of scope and sequences from similar districts with similar programs.

14.3.3 Review of scope and sequence by expert authority or a combination of expert and practitioner panels.

APPLICATION FOR SUMMER CURRICULUM WORK
FOLLOW-UP TEAM

CHAIRPERSON: _____

SUBJECT AREA: _____

DATES: _____

Follow-up Team: Primary Representatives: _____

_____

Intermediate Representatives: _____

_____

Junior High Representatives: _____

_____

High School Representatives: _____

_____

* * * * * * * * * * * * * * TO BE COMPLETED BY OFFICE * * * * * * * * * * * * *

_____ Approved

_____ Disapproved

_____
Building Principal

_____
Superintendent

RETURN TO BUILDING PRINCIPAL BY _____

GUIDELINES FOR CURRICULUM STUDY

	TASKS	TIMELINES
1.0	Selection of subject areas/departments for review and development.	September
1.1	Review seven (7) yea cycle recommendations	March 1
1.2	Decision	
1.2.1	Administrative Team	May
1.2.2	Board of Education	August
2.0	Selection of subject/departmental area study and writing teams.	April 1
2.1	Receive applications from interested staff	March 1
2.2	Selection of K-12 teams	April 1
2.3	Organization of K-12 teams	April 15
2.3.1	Select Chairman	
2.3.2	Determine clerical assistance and procedures	
2.3.3	Determine work schedules, meeting times, places, etc.	
3.0	Orientation of K-12 teams.	May 1
3.1	Review purposes of K-12 planning	
3.2	Review various functions of curriculum design and instructional planning	
3.3	Review Guidelines for Development of Curriculum Scope and Sequence Manuals	
4.0	Scope and Sequence Planning	
4.1	Preparation of individual subject/course outlines according to recommended format, OR	May 15
4.2	Select alternate format for preparation of scope and sequence outlines and submit to Superintendent of Schools for approval.	May 1
4.3	Develop topic outlines of content, skills and attitudes covered in each course.	May 1
4.3.1	Utilizing current texts, references, workbooks and other supplemental materials, develop topic outlines of the course as currently taught	
4.3.2	Utilize district planning guides for charting scope and sequence	
4.3.3	Review topic outlines for areas of weakness in covering content, skills and attitudes	

4.3.4 Review topic outline for appropriate developmental sequences of content, skills and attitude

4.3.5 Review topic outlines for areas of weakness in charting scope and sequence for level of instruction, i.e., introduction, reinforcement, enrichment and/or mastery

		Summer Work Schedule (Days)
4.4	Review individual scope and sequence outlines according to the following criteria.	
4.4.1	Does the outline provide evidence of the scope of the course to which it refers?	
	1) Does the scope reflect breadth of content, skills, and attitudes covered in the course?	1
	2) Does the scope reflect depth in which each topic of content, skill and attitude is treated?	1
4.4.2	Does the outline specify topics (content, skills, and attitudes) in appropriate sequence?	
	1) Are developmental topics presented in appropriate sequence or order?	2
	2) Are topics sequenced appropriately so students will master the content, skill or attitude?	2
4.4.3	Is it possible for others to understand the nature of his course - scope and sequence - from the outline?	3
	1) other teachers in the same department?	
	2) administrators?	
	3) parents?	
	4) students?	
	5) other professionals including special education teachers and counselors?	
4.4.4	Do courses that precede, and are prerequisite to, this one provide appropriate scope and sequence in content, skills and attidues so students have sufficient background to master this course?	3/4
4.4.5	Does the scope and sequence outline identify topics which assist students in personal development including developing positive self concepts?	3/4
4.4.6	Does this course provide appropriate scope and sequence of topics - content, skills and attitudes - to other courses which it precedes and for which it is a prerequisite?	5
4.5	Has there been review of the recommendations concerning scope and sequence of district studies?	5
4.5.1	Self Studies	
4.5.2	NCA Visitation Team reports	

5.0 Philosophy and Purpose

5.1 Review appropriate areas of the self studies. 6

5.2 Development of a statement of Philosophy for the subject area identifying the following:

5.2.1 Reasons for the program of studies.

5.2.2 Major assumptions upon which instructional programs are planned.

5.3 Development of major goal statements identifying student outcomes in terms of content to be mastered, skills to be demonstrated, and attitudes to exhibit. (8-12 statements) 6

6.0 Development of specific instructional programs, learning activities, and learning materials for special education students, both handicapped and gifted. 7/8

6.1 Develop classroom and building-level processes for providing classroom-based learning activities for students with I.E.P.'s specifying the regular classroom as a major portion of the "least restrictive environment."

7.0 Selection of instructional texts, references, workbooks, laboratory guides and other standard classroom materials necessary to support defined scope and sequence. 10

7.1 Review recommendations from self studies and the NCA Visitation Teams.

7.2 Identification of specific field trips and other enrichment activities, including proposed student outcomes that enhance student learning of content, skills and attitudes as specified in scope and sequence.

8.0 Review of facilities and equipment necessary to support the defined scope and sequence. 11

8.1 Review of recommendations concerning facilities and equipment from the self studies and the NCA Visitation Team reports.

8.2 Study of current facilities use by all staff for all programs and services for the respective curriculum area.

8.3 Recommendations for improvement of facilities including rationale stating how each recommendation will result in direct benefits to student and/or staff.

8.4 Complete inventories of all equipment identifying current condition and expected life of each piece.

8.5 Recommendation of equipment needed to fully implement defined scope and sequence.

9.0 Policies and Procedures — 12

- 9.1 Review of recommendations from self studies and the NCA Visitation Team.
- 9.2 Review of current policies and procedures - both formal and informal - that affect respective curriculum areas or services. Such review should include, but not necessarily be limited to the following:
  - 9.1.1 testing
  - 9.1.2 evaluating of and reporting student achievement
  - 9.1.3 grading practices
  - 9.1.4 required and elective courses
  - 9.1.5 scheduling
  - 9.1.6 prerequisites
- 9.3 Recommendations for new policies, practices and/or revisions necessary to support the defined scope and sequence.
- 9.4 Recommendations for revisions in existing policies, practices, and/or procedures necessary to support the defined scope and sequence.

10.0 Development of plans for continued study and implementation of recommendations. — 13/14

- 10.1 Develop plans and timetables for studies, completions of studies, and implementation of recommendations for those items or tasks not addressed.
- 10.2 Develop implementation plans and timetables for all recommendations, including the following:
  - 10.2.1 Self Studies
  - 10.2.2 NCA Visitation Team Report
  - 10.2.3 Team recommendations
  - 10.2.4 Other recommendations of Instructional Coordinating Council, Administration and Board of Education

11.0 Preparation of all documents for typing and printing. — 15

- 11.1 Edit of initial drafts
- 11.2 Select publication formats

12.0 Review of results by Curriculum — September

- 12.1 Scope and Sequence
- 12.2 Recommendations for textbooks, references, workbooks, laboratory guides and other standard classroom materials
- 12.3 Recommendations for facilities and equipment
- 12.4 Recommendations for policies, practices, and procedures
- 12.5 Plans for implementation and continued study and development

13.0 Wrap Up — 15

- 13.1 Concluding tasks and discussions
- 13.2 Celebration

14.0 Follow-up (second year)

- 14.1 Review of initial scope and sequence draft checking for content, knowledge and attitudinal gaps.
- 14.2 Review of initial scope and sequence, checking for coordination needs, coordination improvement, etc.
- 14.3 Validation of scope and sequence by any or all of the following activities.
  - 14.3.1 Matching of content to standardized achievement measures.
  - 14.3.2 Review of scope and sequences from similar districts with similar programs.
  - 14.3.3 Review of scope and sequence by expert authority or a combination of expert and practitioner panels.

Instructional Coordinating Council

An Instructional Coordinating Council (ICC) is an effective means of providing leadership, coordination and quality control of curriculum and instructional improvement efforts. The ICC helps to develop broad-based ownership and support for C/I planning.

ICC's also ensure that C/I leadership is not focused in one individual. It likewise ensures that district leadership for C/I planning does not change when individual leadership changes.

The following is a model for development of an Instructional Coordinating Council.

Goals/Objectives

1. Provide leadership for C/I planning at faculty level to insure continuity of process and product.
2. Develop quality control mechanism for C/I planning, process and product.
3. Provide means of continuous study and devleopment of C/I.
4. Provide decision-making process for C/I that combines faculty and administrative leadership.

Duties

1. Determine subject areas for study and development.
2. Determines guidelines and schedules for study and development process.
3. Recommends personnel for study and development teams.
4. Receives and acts on reports from study and development teams.
5. Advises and recommends to the administration and board changes in C/I.
6. Establishes procedures for monitoring and evaluation of C/I.
7. Receives annual report of student achievement and makes recommendations for C/I improvement.
8. Issues annual report of results of studies and evaluations.

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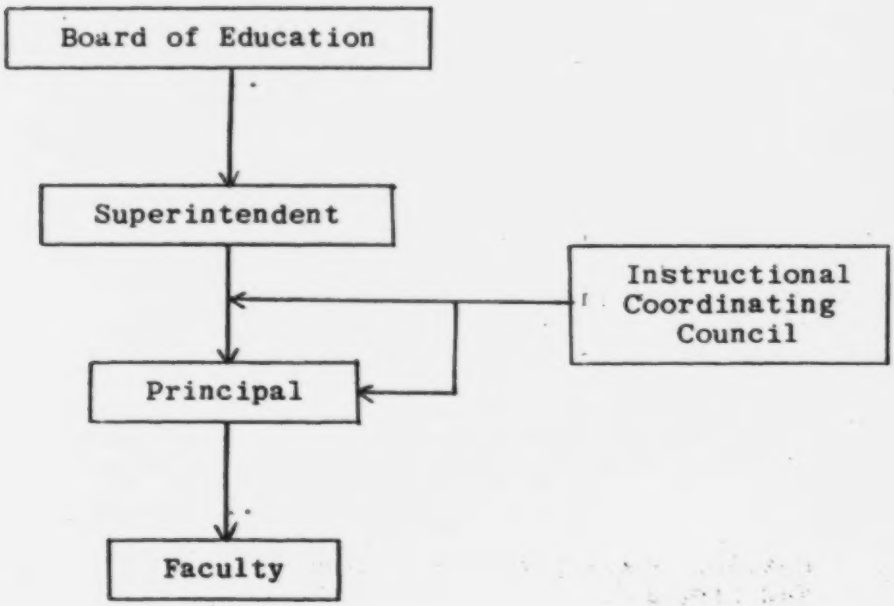
Reports to:

Superintendent



Meetings:

The ICC will meet monthly using one-half day of released time. The meetings are scheduled for a specific day each month and shall run from 1:00-5:00 p.m. Other meetings are scheduled outside of class time, as needed.

Compensation:

1. All members shall receive one-half day released time per month.
2. All members shall receive compensation at the rate of $500.00.
3. Chairperson shall receive $1,000.00.
4. Secretarial assistance is also provided.

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Membership

Principals	3
Faculty	
Elementary	2
Junior High	2
High School	2
TOTAL	9

Selection

1. Interested faculty may apply to the Superintendent of Schools. Selection of faculty representatives will be made by the board upon recommendations of the administrative team.

2. The chairperson will be designated by the superintendent.

Fiscal Memo

Salaries	
$ 500 x 5	2,500.00
$1000 x 1	1,000.00
	$3,500.00
Fixed Charges	260.00
Secretarial	500.00
	$4,260.00

OBJECTIVES - Learner outcome statements

. . . What is to be done or known (or both).

. . . How the learner is to do it or demonstrate it.

. . . How well is it to be done or shown.

TOPIC-----OBJECTIVES: Three Key questions

. . . What is it the learner is to know, do or feel as a result of instruction in this topic?

. . . How is the learner to give evidence (demonstrate) that he knows, does or feels?

. . . What level (how well) of performance - knowledge, skill, or attitude - is required?

GOALS - Subject or program statements

. . . Statement of broad direction, general purpose or intent.

. . . Timeless

. . . Not concerned with specific achievement.

. . . Incorporates multiple objectives.

LEARNER OBJECTIVES - WORKSHEET

Topic(s)	Know (Knowledge)	Do (Skill)	Feel (Attitude - Values)
How (Demonstration)			
How Well (Level of Performance)			

48

49

GOAL WORKSHEET

OBJECTIVES (Cluster)	Purpose - Intended Outcome
50	51

TABLE I. Major Categories in the Cognitive Domain of the Taxonomy of Educational Objectives (Bloom, 1956)

Descriptions of the Major Categories in the Cognitive Domain
1. KNOWLEDGE. Knowledge is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required in the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.
2. COMPREHENSION. Comprehension is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.
3. APPLICATION. Application refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.
4. ANALYSIS. Analysis refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material.
5. SYNTHESIS. Synthesis refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech) a plan of operations (research proposal) or set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structures.
6. EVALUATION. Evaluation is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal (organization) or external criteria (relevant to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all of the other categories, plus conscious value judgements based on clearly defined criteria.

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TABLE II. Examples of General Instructional Objectives and Behavioral Terms for the Cognitive Domain of the Taxonomy

Illustrative General Instructional Objectives	Illustrative Behavioral Terms for Stating Specific Learning Outcomes
Knows common terms Knows specific facts Knows methods and procedures Knows basic concepts Knows principles	Defines, describes, identifies, labels, lists, matches, names, outlines, reproduces, selects, states.
Understands facts and principles Interprets verbal material Interprets charts and graphs Translates verbal material to mathematical formulas Estimates future consequences implied in data Justifies methods and procedures	Converts, defends, distinguishes, estimates, explains, extends, generalizes, gives examples, infers, paraphrases, predicts, rewrites, summarizes
Applies concepts and principles to new situations Applies laws and theories to practical situations Solves mathematical problems Constructs charts and graphs Demonstrates correct usage of a method or procedure	Changes, computes, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses.
Recognizes unstated assumptions Recognizes logical fallacies in reasoning Distinguishes between facts and inferences Evaluates the relevancy of data Analyses the organizational structure of a work (art, music, writing)	Breaks down, diagrams, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, points out, relates, selects, separates, subdivides.
Writes a well organized theme Gives a well organized speech Writes a creative short story (or poem, or music) Proposes a plan for an experiment Integrates learning from different areas into a plan for solving a problem Formulates a new scheme for classifying objects (or events, or ideas)	Categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes.
Judges the logical consistency of written material Judges the adequacy with which conclusions are supported by data Judges the value of a work (art, music, writing) by use of internal criteria Judges the value of a work (art, music, writing) by use of external standards of excellence	Appraises, compares, concludes, contrasts, criticizes, describes, discriminates, explains, justifies, interprets, relates, summarizes, supports.

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TABLE III. Major Categories in the Affective Domain of the Taxonomy of Educational Objectives (Krathwohl, 1964)

Descriptions of the Major Categories in the Affective Domain
1. RECEIVING. Receiving refers to the student's willingness to attend to particular phenomena or stimuli (classroom activities, textbook, music, etc.). From a teaching standpoint, it is concerned with getting, holding, and directing the student's attention. Learning outcomes in this area range from the simple awareness that a thing exists to selective attention on the part of the learner. Receiving represents the lowest level of learning outcomes in the affective domain.
2. RESPONDING. Responding refers to active participation on the part of the student. At this level he not only attends to a particular phenomenon but also reacts to it in some way. Learning outcomes in this area may emphasize acquiescence in responding (reads assigned material), willingness to respond (voluntarily reads beyond assignment), or satisfaction in responding (reads for pleasure or enjoyment). The higher levels of this category include those instructional objectives that are commonly classified under "interests" that is, those that stress the seeking out and enjoyment of particular activities.
3. VALUING. Valuing is concerned with the worth or value a student attaches to a particular object, phenomenon, or behavior. This ranges in degree from the more simple acceptance of a value (desires to improve group skills) to the more complex level of commitment (assumes responsibility for the effective functioning of the group). Valuing is based on the internalization of a set of specified values, but clues to these values are expressed in the student's overt behavior. Learning outcomes in this area are concerned with behavior that is consistent and stable enough to make the value clearly identifiable. Instructional objectives that are commonly classified under "attitudes" and "appreciation" would fall into this category.
4. ORGANIZATION. Organization is concerned with bringing together different values, resolving conflicts between them, and beginning the building of an internally consistent value system. Thus the emphasis is on comparing, relating, and synthesizing values. Learning outcomes may be concerned with the conceptualization of a value (recognizes the responsibility of each individual for improving human relations) or with the organization of a value system (develops a vocational plan that satisfies his need for development of a philosophy of life) would fall into this category.
5. CHARACTERIZATION BY A VALUE OR VALUE COMPLEX. At this level of the affective domain, the individual has a value system that has controlled his behavior for a sufficiently long time for him to have developed a characteristic "life style." Thus the behavior is pervasive, consistent, and predictable. Learning outcomes at this level cover a broad range of activities, but the major emphasis is on the fact that the behavior is typical or characteristic of the student. Instructional objectives that are concerned with the student's general patterns of adjustment (personal, social, emotional) would be appropriate here.

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TABLE IV. Examples of General Instructional Objectives and Behavioral for the Affective Domain of the Taxonomy

Illustrative General Instructional Objectives	Illustrative Behavioral Terms for Stating Specific Learning Outcomes
Listens attentively Shows awareness of the importance of learning Shows sensitivity to human needs and social problems Accepts differences of race and culture Attends closely to the classroom activities	Asks, chooses, describes, follows, gives, holds, identifies, locates, names, points to, selects, sits erect, relies, uses
Completes assigned homework Obeys school rules Participates in class discussion Completes laboratory work Volunteers for special tasks Shows interest in subject Enjoys helping others	Answers, assists, compiles, conforms, discusses, greets, helps, labels, performs, practices, presents, reads, recites, reports, selects, tells, writes
Demonstrates belief in the democratic process Appreciates good literature (art or music) Appreciates the role of science (or other subjects) in everyday life Shows concern for the welfare of others Demonstrates problem-solving attitude Demonstrates commitment to social improvement	Completes, describes, differentiates, explains, follows, forms, initiates, invites, joins, justifies, proposes, reads, reports, selects, shares, studies, works
Recognizes the need for balance between freedom and responsibility in a democracy Recognizes the role of systematic planning in solving problems Accepts responsibility for his own behavior Understands and accepts his own strengths and limitations Formulates a life plan in harmony with his abilities, interests, and beliefs	Adheres, alters, arranges, combines, compares, completes, defends, explains, generalizes, identifies, integrates, modifies, orders, organizes, prepares, relates, synthesizes
Displays safety consciousness Demonstrates self-reliance in working independently Practices cooperation in group activities Uses objective approach in problem solving Demonstrates industry, punctuality and self-discipline Maintains good health habits	Acts, discriminates, displays, influences, listens, modifies, performs, practices, proposes, qualifies, questions, revises, serves, solves, uses, verifies

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OBJECTIVE CHECKLIST

COGNITIVE DOMAIN

LEVELS	OBJECTIVES *1											
KNOWLEDGE												
COMPREHENSION												
APPLICATION												
ANALYSIS												
SYNTHESIS												
EVALUATION												

*1 Place the number of each objective according to appropriate level.

PSYCHOMOTOR DOMAIN

LEVELS	OBJECTIVES *1											
INITIATION												
MANIPULATION												
PRECISION												
ARTICULATION												
NATURALIZATION												

*1 Place the number of each objective according to appropriate level.

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AFFECTIVE DOMAIN

LEVELS	OBJECTIVES*1											
RECEIVING												
RESPONDING												
VALUING												
ORGANIZATION												
CHARACTERIZATION												

*1 Place number of each objective as it fits into appropriate level.

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GOAL WORKSHEET

OBJECTIVES (Cluster)	Purpose - Intended Outcome
58	59

SOME MANAGEMENTS THOUGHTS ABOUT C/I PLANNING

CURRICULUM AND INSTRUCTION PLANNING SHOULD NOT BE (BUT OFTEN IS..)...

Like working in a M*A*S*H* unit
Like making sausage
Like shooting at a moving target
A story of Samson and the jawbone of an ass
A liturgical celebration of the chosen few
An experience of divine inspiration
Like a desk drawer for things with which you don't know what to do

CURRICULUM AND INSTRUCTIONAL PLANNING IS...

A skill for professional leaders
An opportunity to affect the lives of learners
Exercise in discipleship
Proactive, systematic
Like drawing a map
Like blueprinting a house
Like designing or re-designing a building
Like a filing system for access and retrieval

SOME BASIC RULES

Abilene's Paradox: People in groups may tend to agree on courses of action which, as individuals, they know are stupid.

Logic is not the same as validity.

Smith's Rule: No matter which way you slice it, it's still baloney.

The more you run over a dead cat, the flatter it gets.

Curriculum processes are not for those who can't eat sausage after watching it being made.

BELIEFS ABOUT SCHOOL IMPROVEMENT PROJECTS

1. For all of the information that is available about curriculum development, instructional planning and school improvement, it all boils down to the implementation of practices that are efficient and effective.

   Efficiency=doing the job right, in the least time, with the least expenditure of resources.

   Effectiveness=doing the right job, efficiently.

2. Planning is important in the early phases of any project. However, acting is always better than protracted planning. Protracted planning is worse than none at all.

3. Principals are key figures in all projects. However, principals alone can not do the project and ineffective principals(or superintendents) can always be circumvented.

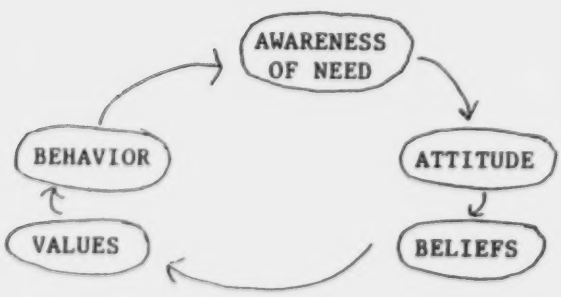
4. Ownership in the beginning stages of any project is almost non-existent. It takes time to build trust, ownership, and commitment and it comes through actual work on the project. Leadership must be both initiatory and considerate during the entire project with mixtures of the two more important at key project points.

5. Coercion is not always bad. Firm push and help can launch most projects.

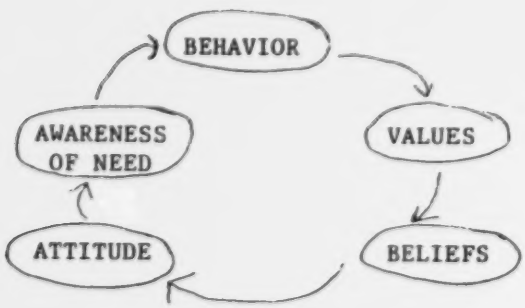
6. New programs and practices imported from somewhere else offer a cost-effective and even preferable alternative to major, local development efforts. Adopt concepts, adapt processes, invent when necessary.

CHANGE MODELS

INFUSION MODEL



MANDATE MODEL



A systematic approach to curriculum development and instructional planning results in better designs, better decisions, better processes, and hopefully improved teaching and learning.

1. A plan focuses attention on goals and intended objectives.

2. A plan increases the probability of success.

3. Economy of time and effort is improved by a plan.

4. A plan facilitates communication and coordination of projects and events.

5. A plan reduces stress and anxiety.

In organizing for curriculum development and instructional planning, the following principles are worth remembering:

1. Every step in the project should be preceded by a plan.

2. Every involved in the project needs to have a defined role and to understand the roles and responsibilities of all other participants.

3. It is unwise to proceed with any project that does not have at least minimum resources and support.

4. The more detailed the project, the smaller the working committee. Large groups and mass involvement should be planned for at "gross" levels.

5. Curriculum development is one of the best forms of staff development and provides one of the only opportunities that are available to schools for enriching the jobs of teachers and principals.

6. Regardless of what is going on the world around you, begin where you are and take the next step without skipping steps in order to catch the others.

7. People in groups may do things and choose courses of action that they individually know are stupid.

Jerome Bruner:

"Effective school programming needs something to....
...get it started
...keep it going
...and, keep it from being random and haphazard."

CONSTRAINTS

A constraint is a factor external to a system that limits the capability of the system to function. What are some of the constraints that must be considered in curriculum development and instructional planning projects?

1. Learners-background, aptitude, motivation, interest.

2. Political--attitudes, laws, moral codes.

3. Policy-innovation, content, censorship.

4. External examinations-local, state, national

5. Financial and material-budgets, materials, and supplies.

6. Staffing-numbers, assignments, expertise, and training.

7. Time

8. Physical environment-space, climate, resources.

9. Resources-financial, time, personnel, environmental.

All of the above constraints must be considered in the final decision--"is this project feasible?"

Curriculum Management Checklist

YES	NO	
		Management
_____	_____	The Board, administration, and professional staff support the development of congruence among written, taught, and tested curriculum.
_____	_____	There is active administrative involvement in the development, implementation, and evaluation of the instructional program.
_____	_____	Professional staff is involved at all levels of the process.
		Written Curriculum
_____	_____	The written curriculum is up-to-date and covers the entire instructional program, K-12.
_____	_____	There is a systematic procedure used to continuously update the written curriculum.
		The format used in the written curriculum includes:
_____	_____	Written objectives to be achieved by students;
_____	_____	Content, teaching strategies, and resources directly related to objectives;
_____	_____	Indicators of student mastery;
_____	_____	Methods of program and student evaluation.
_____	_____	The entire staff is involved in the articulation and coordination of the written instructional program.
		Taught Curriculum
_____	_____	The written curriculum serves as a guide for the development of daily lesson plans.
_____	_____	Lesson plans are monitored for congruence with planned instructional programs.
_____	_____	Material acquisitions are directly related to program goals and objectives.
_____	_____	Classroom supervision includes monitoring content, as well as climate and teaching techniques.
_____	_____	Instructional decisions are based on facilitating student mastery (i.e., time, strategy, need for remediation or enrichment).

YES	NO	
		Tested Curriculum
_____	_____	The formal district assessment program matches the written and taught curriculum.
_____	_____	The evaluation design for students and programs uses a variety of formative and summative techniques (i.e., norm referenced tests, criterion referenced tests, observation, questionnaires, etc.).
_____	_____	Evaluation data are used to modify instructional and program design.

MONITORING

Three things to do . . .

1. Lesson plan analysis.
2. Data capture outline.
3. Tests, quizzes.

Lesson Plan Analysis

Summative Rating

Teacher:_____ Date:_____

Date(s) of lesson Plan:_____, _____,

_____, _____, _____

1. The type of learning is identified as new learning, review of learning or assessment (pre-posttest) of learning.

1	2	3	4	5
No type of learning is identified.		Some types of learning are identified.		All types of learning are identified.

Comments:

2. Allotment of time is appropriate for teaching the specified content.

1	2	3	4	5
Allotment of time is not appropriate.				Allotment of time is appropriate.

Comments:

3. The instructional objectives are stated as student outcomes.

1	2	3	4	5
None of the objectives are stated as student outcomes.		Some of the objectives are stated as student outcomes.		All of the objectives are stated as student outcomes.

Comments:

4. The student activities selected for the lesson are congruent to the desired student outcomes.

1	2	3	4	5
None of the activities are congruent to desired student outcomes.		Some of the activities are congruent to desired student outcome.		All of the activities are congruent to desired student outcome.

Comments:

5. The learning is planned at the appropriate level of difficulty for the students.

1	2	3	4	5
None of the learning is at the appropriate level of difficulty.		Some of the learning is at the appropriate level of difficulty.		All of the learning is at the appropriate level of difficulty.

6. The methods and procedures used by the teacher are appropriate for the learning situation

1	2	3	4	5
None of the methods and procedures are appropriate.		Some of the methods and procedures are appropriate.		All of the methods and procedures are appropriate.

Comments:

7. Variety is planned into this learning situtation.

1	2	3	4	5
Little or no variety is planned in the learning situation.		Some variety is planned in the learning situation.		Variety is widely planned in the learning situation.

Comments:

8. Evaluation of student outcomes is based upon measurable data and is planned into the lesson.

1	2	3	4	5
No measurable evaluation of student outcome is planned.		Evaluation of student outcomes is sometimes measurable		Student outcomes are always evaluated with measurable data.

Comments:

9. Objectives and content are congruent with district scope and sequence.

1	2	3	4	5
Objectives and content match scope and sequence.		Some objectives and content match scope and sequence.		None of objectives objectives or content match scope and sequence.

Comments:

Summary Notations:

Directive:

Date:_____ Administrator:_____

Data Capture

Teacher:_____ Date:_____

Time	Outline	Topic Summary

Follow-up

1. Location of topics in scope and sequence outline for course:

2. Narrative comment about degree of congruence of topics with scope and sequence outline:

Supervisor _____ Date _____

Test - Quiz Analysis

Teacher:_____ Date:_____

Date of test/quiz:_____ Course/Subject:_____

	YES				NO
1. The items cover the subject adequately?	1	2	3	4	5
2. The items are clear and of appropriate difficulty for the students?	1	2	3	4	5
3. The items require responses from all levels of Bloom's taxonomy?	1	2	3	4	5
4. The items are congruent with the scope and sequence for the area or unit?	1	2	3	4	5
5. The items represent an adequate sample of the topics to be learned for this area of unit?	1	2	3	4	5

Narrative comments:

Supervisor:_____ Date:_____

SCOPE AND SEQUENCE SIMULATION

Subject: Research Skills

1. What are the major topics to be studied in learning research skills?

2. Select one topic from your major list. What subtopics would be studied under this major topic?

3. Are there any subtopics which require further breakdown in order to show breadth and depth? (If so, continue to break them down).

4. In what order should these topics be studied?

5. Establish at least four (4) levels of instruction. Plan the scope and sequence for mastery of this subtopic at level #4. Use the coding

   I
   R
   D
   (D)

6. Select one subtopic from the above list. At the mastery level, answer the following questions:

   6.1 What are students to know?

   6.2 What are students to be able to do?

   6.3 What attitudes, value or feelings are students to develop?

(Objective) 7. Using the format for an objective, write an objective incorporating your answer to one of the three questions above.

(Goals) 8. Why should students master these objectives?

(Purpose) 9. Why should students be able to know, do or feel what you wrote in question #8?

(Philosophy) 10. Why is it important for students to be able to know, do or feel what you wrote in question #9?

(Rationale) 11. Is this something for which our schools are responsible? If so, why? And, in what way?

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INSTRUCTIONAL PLANNING GUIDE FOR MATHEMATICS CURRICULUM K-12
Scope and Sequence

Strand Title Whole Numbers 2.0

	K	1	2	3	4	5	6	7	8	GM	AI	G	AII	C	Comments
2.1.3 Read and write whole numbers (cont.)															
Multiples of															
2 to 20		I	(R)												
2 to 100			I	(R)	R	R									
3 to 100				I	R	R	(R)			R					
4 to 100				I	R	R	(R)			R					
5 TO 100		I	R	(R)	R	R									
10 to 100		I	R	(R)	R	R									
2.1.4 Read and write number words															
Zero to ten		I	R	(R)											
Eleven to twenty			I	R	(R)	R				R					
Ten to one hundred				I	I	R	(R)			R					
Hundreds to billions						I	R	(R)	R	R					
2.1.5 Define place value															
Ones and tens		I	R	R	R	(R)	R	R	R	R					
Hundreds			I	R	R	(R)	R	R	R	R					
Thousands				I	R	R	(R)	R	R	R					
Millions					I	R	(R)	R	R	R					
Billions						I	(R)	R	R	R					
Expanded notation					I	R	R	(R)	D	R	D	D	D	D	
2.1.6 Round to nearer															
Tens, hundreds				I	R	(R)	R	R	R	R					
Thousands					I	R	(R)	R	R	R					
Ten thousands						I	(R)	R	R	R					
Hundred thousands and more						I	(R)	R	R	R					

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Strand Title Whole Numbers 2.0

	K	1	2	3	4	5	6	7	8	GM	AI	G	AII	C	Comments
2.1.7 Compare whole numbers to whole numbers															
By terms															
Greater than, less than	I	R	(R)	R											
By symbols															
=		I	(R)	R											
><			I	R	R	(R)	R	R	R	R					
2.1.8 Sequence															
Ordinal numbers [i.e. 1st, 5th]		I	I	R	R	R	(R)								
Whole numbers		I	I	I	R	R	(R)			R					
2.1.9 Sets															
Sort, classify, compare, regroup	I	R	(R)												
Match sets to numbers	I	R	(R)												
Define															
Terms															
Set									I		R	R	(R)	R	
Finite, infinite									I		R	R	(R)	R	
Universal											I	I	(R)	R	
Subsets									I		R	R	(R)	R	
Members (Elements) of a set									I		R	(R)	R	R	
Replacement											I	I	(R)	R	
Solution									I		R	R	(R)	R	
Union (disjunction), intersection (conjunction)									I		I-R	R	(R)	R	
Disjoint											I	R	R		
Types of sets															
Whole numbers (W), Counting or Natural Numbers	(C)							I	R		(R)	R	R	R	
Empty or Null (∅)									I		(R)	R	R	R	

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Curriculum Study and Development Survey Summary

		Highly Agree	Agree	Neutral	Disagree	Highly Disagree
2.1	Participation in the study and development process was a personally rewarding experience.	47%	47%	6%		
2.2	Participation in the study and development process was a professionally rewarding experience.	67%	33%			
2.3	All faculty members would benefit from this experience.	27%	47%	3%	20%	3%
2.4	All faculty members should be required to participate.	13%	27%	20%	27%	13%
2.5	I feel that our school district curriculum has improved as a result of study and development.	48%	38%	14%		
2.6	I feel that the quality of teaching has improved as a result of curriculum study and development.	27%	43%	23%	7%	0
2.7	The faculty members in our department/grade level are using the written scope and sequence.	35%	53%	12%	0	0
2.8	The chairman of our study team provided effective leadership.	37%	41%	17%	0	5%
2.9	The curriculum study and development cycle should be continued.	40%	53%	7%	0	0
2.10	I would participate in another study and development project if given the opportunity.	28%	65%	0	7%	0

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